connected to the detector elements [(10A, 10B, 10C, 10D)] of the photodetector [(10)] and [which output] providing the output signal [(A+C, B+D)].

4. (Amended) The apparatus according to Claim 3, further comprising edge detectors [(21, 21')] and phase angle detectors [(22, 22')], to which the output signals [(A, B, C, D, A+C, B+D)] are fed and whose outputs are connected to the phase [detector (13)] forming unit and to the edge sequence detector [(14)].

5. (Amended) The apparatus according to Claim 2, further comprising edge detectors [(21, 21')] and phase angle detectors [(22, 22')], to which the output signals [(A, B, C, D, A+C, B+D)] are fed and whose outputs are connected to the phase [detector (13)] forming unit and to the edge sequence detector [(14)].

6. (Amended) The apparatus according to Claim 1, further comprising diagonal summation signal forming units [(11, 12) whose] having inputs [are] connected to the detector elements [(10A, 10B, 10C, 10D)] of the photodetector [(10)] and [which output] providing the output signal [(A+C, B+D)].

7. (Amended) The apparatus according to Claim 1, further comprising edge detectors [(21, 21')] and phase angle detectors [(22, 22')], to which the output signals [(A, B, C, D, A+C, B+D)] are fed and whose outputs are connected to the phase [detector (13)] forming unit and to the edge sequence detector [(14)].

8. (Amended) The apparatus according to one of Claim 1, wherein the phase forming unit [(13)] and the edge sequence detector [(14)] are integrated.

9. (Amended) The apparatus according to claim 1, further comprising a fault indicator [(25), which is] connected to an output of the edge sequence detector [(14)].

10. (Amended) A method for determining a correct track error signal [(TE) in accordance with a] utilizing a phase detection method, comprising the steps of:

checking [of the] a sequence of zero crossings [(a, b)] of signals [(A, B, C, D, A+C, B+D),] whose [phase is] phases are detected[,] with regard to impermissible sequences[,] ; and

preventing the outputting of a phase value [(φ)] when an impermissible sequence is [present] detected.

11. (Amended) The method of Claim 10, wherein a sequence of more than two successive zero crossings of one of the signals [signal (A, B, C, D, A+C, B+D)] without the occurrence of a zero crossing in [the other signal (A, B, C, D, B+D, A+C)] another of the signals is an impermissible sequence.

12. (Amended) The method of Claim 10, wherein a sequence of more than one pair of zero crossings within a predetermined time period, a pair of zero crossings consisting of a zero crossing of one [signal (A, B, C, D, A+C, B+D)] of the signals and a succeeding zero crossing of [the other signal (A, B, C, D, B+D, A+C)] another one of the signals, is an impermissible sequence.

13. (Amended) The method of Claim 10, wherein an error indication signal [(FI)] is generated as a function of the accumulation of impermissible sequences.

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14. (Amended) The method of Claims 10, wherein the signals [(A, B, C, D, A+C, B+D)] are evaluated in a predetermined clock cycle [(T)], a zero crossing [(a, b)] being present if one of two successive values [(a_n, a_{n-1}, b_n, b_{n-1})] of the signal [(A, B, C, D, A+C, B+D)] lies above, and the other of the said values lies below, a reference value [(SL1, SL2)], and the temporal position of the zero crossing [(a, b)] is interpolated using these two values [(a_n, a_{n-1}, b_n, b_{n-1})].

15. (Amended) The method of Claim 14, wherein the phase value [(φ)] between a zero crossing [(a, b)] of one signal of the signals [(A, B, C, D, A+C, B+D)] and a zero crossing [(b, a)] of [the other signal (A, B, C, D, B+D, A+C)] another of the signals is determined from the respective interpolated temporal position [(t_1, t_2] and the number of clock cycles [(T_A)] lying between the zero crossings [(a, b)].

16. (Amended) The method of Claim 10, further comprising the step of extrapolating the track error signal [(TE)] in the event of an impermissible sequence.

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17. (Amended) The method of Claim 10, wherein the phase detection method is the differential phase detection method, the signals to be compared being the diagonal summation signals [(A+C, B+D)].